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| #51 Search (vector or recombinant) AND (leader or signal) AND (tPA or t-PA or "tissue plasminogen activator") Limits: Publication Date to 1999/11/24 | 12:26:54 | <u>152</u> |
| #50 Search (leader or signal) AND (tPA or t-PA or "tissue plasminogen activator") Limits: Publication Date to 1999/11/24 | 12:26:36 | <u>1085</u> |
| #45 Related Articles for PubMed (Select 10400713) | 11:41:53 | <u>116</u> |
| #44 Search (HCV or "hepatitis C") AND (E2-661 or E2661 or (E2 AND truncat* and C-termin*)) Limits: Publication Date to 1999/11/24 | 11:39:04 | <u>40</u> |
| #46 Search #44 AND #45 Limits: Publication Date to 1999/11/24 | 11:37:29 | <u>2</u> |
| #43 Search (HCV or "hepatitis C") AND (E2-661 or E2661 or (E2 AND truncat* and 661) Limits: Publication Date to 1999/11/24 | 11:37:14 | <u>2</u> |
| #42 Search (HCV or "hepatitis C") AND (E2-661 or E2661) Limits: Publication Date to 1999/11/24 | 11:36:30 | <u>2</u> |
| #39 Related Articles for PubMed (Select 471053) | 10:43:11 | <u>106</u> |
| #2 Search (HCV or "hepatitis C") AND (384-661 or E2661 or "384 to 661" or E2-661 or 661) Limits: Publication Date to 1999/11/24 | 09:49:08 | <u>18</u> |
| #1 Search (HCV or "hepatitis C") AND (384-661 or E2661 or "384 to 661" or E2-661 or 661) | 09:48:03 | <u>52</u> |

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Apr 4 2007 12:47:27

WEST Search History

DATE: Monday, April 30, 2007

| Hide? | Set Name | Query | Hit Count |
|--------------------------|---|--|--------------|
| | <i>DB=PGPB,USPT,EPAB,JPAB,DWPI; PLUR=YES; OP=OR</i> | | |
| <input type="checkbox"/> | L13 | L12 and L11 | 2 |
| <input type="checkbox"/> | L12 | L10 and (HBV or HCV) same (fusion or chimer*) | 39 |
| <input type="checkbox"/> | L11 | L10 and @py<1998 | 90 |
| <input type="checkbox"/> | L10 | (fusion or chimer*) same (link\$4 or spac\$4) with (heterolog\$ near5 proteins) | 1753 |
| <input type="checkbox"/> | L9 | (HCV or hepatitis adj C) with (envelope adj protein adj 2 or E2) and E2 with 384 and (E2 with 661 or E2-661 or E2 adj 661) | 37 |
| <input type="checkbox"/> | L8 | (HCV or hepatitis adj C) same E2 and E2 same (truncat\$ same (384-661 or 384 adj3 661) or E2661 or E2-661 or truncat\$ with 661) | 9 |
| <input type="checkbox"/> | L7 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine near10 aspartic or Ile near10 ASP or I-D ILE adj ASP) | 45 |
| <input type="checkbox"/> | L6 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine near10 aspartic or Ile near10 ASP or I-D) | 45 |
| <input type="checkbox"/> | L5 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine near10 aspartic or I-D) | 0 |
| <input type="checkbox"/> | L4 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine adj3 aspartic or I-D) | 0 |
| <input type="checkbox"/> | L3 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10((isoleucine adj3 aspartic or I-D or ID) not SEq adj ID) | 96 |
| <input type="checkbox"/> | L2 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) near10(isoleucine adj3 aspartic or I-D or ID) | 6051 |
| <input type="checkbox"/> | L1 | (fusion or chimer*) same (link\$4 or spac\$4) and (link\$ or spac\$) with (isoleucine adj3 aspartic or I-D or ID) | 7809 |

END OF SEARCH HISTORY

BLASTP 2.2.16 [Mar-25-2007]

Reference:

Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer,
Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman
(1997), "Gapped BLAST and PSI-BLAST: a new generation of
protein database search programs", Nucleic Acids Res. 25:3389-3402.

RID: 1177943386-3285-93679057902.BLASTQ2

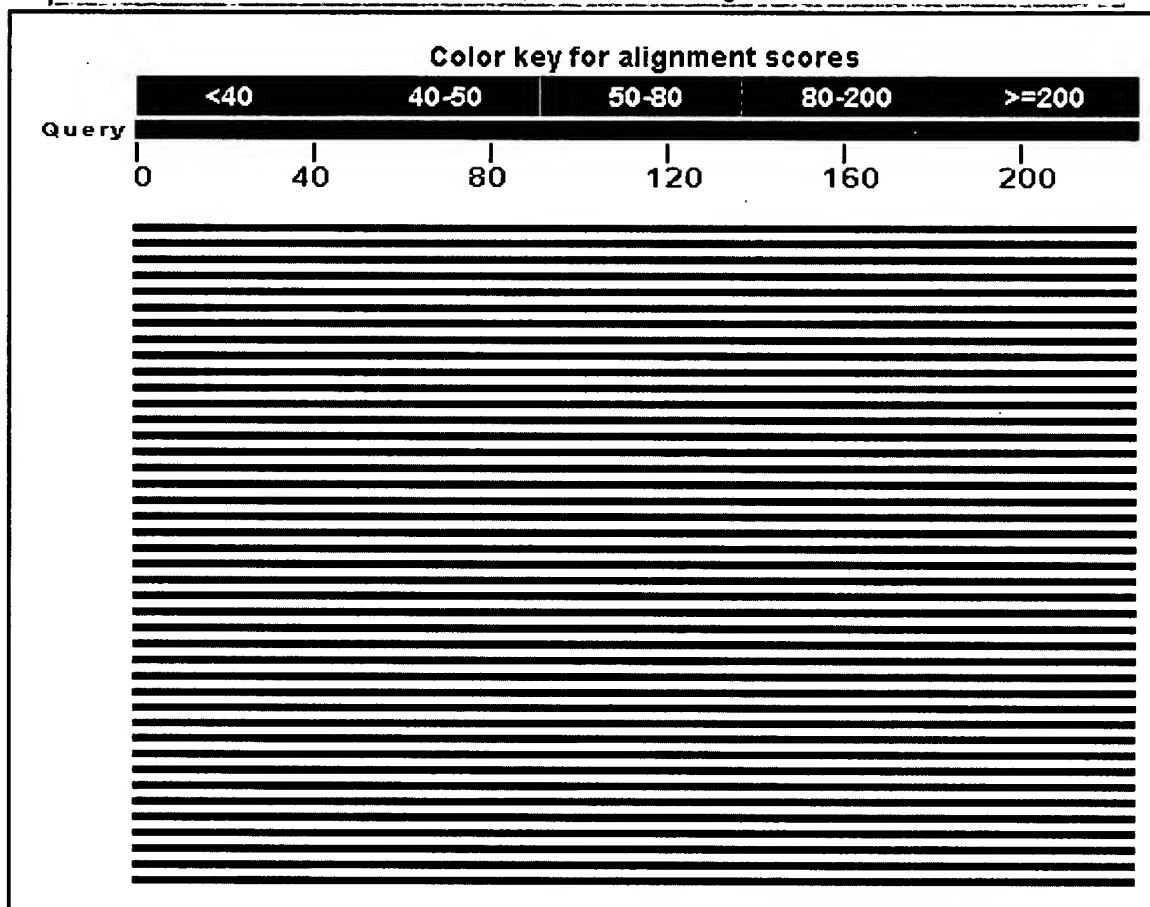
Database: All non-redundant GenBank CDS
translations+PDB+SwissProt+PIR+PRF excluding environmental samples
from WGS projects
4,887,113 sequences; 1,688,179,597 total letters

If you have any problems or questions with the results of this search
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Query=
Length=226

Distribution of 100 Blast Hits on the Query Sequence

Mouse-over to show defline and scores, click to show alignments





Distance tree of results NEW

| Sequences producing significant alignments: | | Score (Bits) | E Value |
|--|--|-----------------|------------|
| gi\|133919201\|emb\|CAL29861.1\| | large surface antigen [Hepatitis B | 401 | 1e-110 |
| gi\|128168870\|dbj\|BAF48757.1\| | envelope protein [Hepatitis B virus | 401 | 1e-110 |
| gi\|82491850\|gb\|ABB77805.1\| | HBsAg [Hepatitis B virus] | 401 | 1e-110 |
| gi\|62006070\|dbj\|BAD91280.1\| | LHBs [Hepatitis B virus] | 401 | 1e-110 |
| gi\|38000026\|gb\|AAR07096.1\| | large S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|38000031\|gb\|AAR07098.1\| | large S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|32330520\|gb\|AAP79759.1\| | S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|32330516\|gb\|AAP79755.1\| | large S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|32330521\|gb\|AAP79760.1\| | middle S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|14285169\|gb\|AAK58874.1\| | PreS1+PreS2+HBsAg [synthetic const... | 401 | 1e-110 |
| gi\|15419851\|gb\|AAK97196.1\|AF297623 | 4 large/middle/small S protei | 401 | 1e-110 |
| gi\|527444\|emb\|CAA84792.1\| | surface protein S [Hepatitis B virus] | 401 | 1e-110 |
| gi\|15419856\|gb\|AAK97200.1\|AF297624 | 4 large/middle/small S protei | 401 | 1e-110 |
| gi\|4884900\|gb\|AAD31864.1\|AF134147 | 1 surface antigen [Hepatitis B | 401 | 1e-110 |
| gi\|18389986\|gb\|AAL68820.1\| | surface antigen [Hepatitis B virus] | 401 | 1e-110 |
| gi\|22530873\|gb\|AAM96927.1\| | middle S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|59802799\|gb\|AAX07610.1\| | pre-S1 protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|47499925\|gb\|AAT28712.1\| | middle S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|47499924\|gb\|AAT28711.1\| | large S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|47499926\|gb\|AAT28713.1\| | S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|3248975\|gb\|AAC62945.1\| | small surface antigen [Hepatitis B vir | 401 | 1e-110 |
| gi\|5019941\|gb\|AAD37926.1\| | S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|5114083\|gb\|AAD40215.1\|AF090841 | 4 PreS1+PreS2+HBsAg [Hepatitis | 401 | 1e-110 |
| gi\|2289174\|gb\|AAC58006.1\| | middle S protein [Hepatitis B virus... | 401 | 1e-110 |
| gi\|6684101\|gb\|AAF23483.1\|AF209400 | 1 small surface antigen [Hepat | 401 | 1e-110 |
| gi\|71068034\|gb\|AAZ23006.1\| | large S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|71068037\|gb\|AAZ23008.1\| | large S protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|56417960\|gb\|AAV90858.1\| | HBsAg protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|56417968\|gb\|AAV90862.1\| | HBsAg protein [Hepatitis B virus] | 401 | 1e-110 |
| gi\|38000017\|gb\|AAR07092.1\| | large S protein [Hepatitis B virus... | 401 | 1e-110 |
| gi\|4884902\|gb\|AAD31865.1\|AF134148 | 1 surface antigen [Hepatiti... | 401 | 1e-110 |
| gi\|138789\|sp\|P03141\|VMSA HBVW2 | Major surface antigen precurs... | 401 | 1e-110 |
| gi\|56417939\|gb\|AAV90848.1\| | HBsAg protein [Hepatitis B virus] | 400 | 2e-110 |
| gi\|133919218\|emb\|CAL29876.1\| | large surface antigen [Hepatitis... | 400 | 3e-110 |
| gi\|133919217\|emb\|CAL29875.1\| | middle surface antigen [Hepatiti... | 400 | 3e-110 |
| gi\|90901732\|gb\|ABE01801.1\| | S protein [Hepatitis B virus] | 400 | 3e-110 |
| gi\|90901743\|gb\|ABE01806.1\| | S protein [Hepatitis B virus] >gi\|... | 400 | 3e-110 |
| gi\|6684109\|gb\|AAF23487.1\|AF209404 | 1 small surface antigen [Hepat | 400 | 3e-110 |
| gi\|56417958\|gb\|AAV90857.1\| | HBsAg protein [Hepatitis B virus] ... | 400 | 3e-110 |
| gi\|38488599\|dbj\|BAD02316.1\| | large surface protein [Hepatitis B v | 400 | 3e-110 |
| gi\|109637940\|emb\|CAK55123.1\| | middle surface protein [Hepatitis B | 400 | 4e-110 |
| gi\|52353926\|gb\|AAU44345.1\| | large S protein [Hepatitis B virus... | 400 | 4e-110 |
| gi\|47499884\|gb\|AAT28681.1\| | large S protein [Hepatitis B virus] | 400 | 4e-110 |
| gi\|47499882\|gb\|AAT28680.1\| | S protein [Hepatitis B virus] >gi\|... | 400 | 4e-110 |
| gi\|47499881\|gb\|AAT28679.1\| | middle S protein [Hepatitis B viru... | 400 | 4e-110 |
| gi\|47499880\|gb\|AAT28678.1\| | large S protein [Hepatitis B virus... | 400 | 4e-110 |
| gi\|2289192\|gb\|AAC58015.1\| | middle S protein [Hepatitis B virus] | 400 | 4e-110 |

| | | | |
|--|--|-----|--------|
| gi\|2289182\|gb\|AAC58010.1\| | middle S protein [Hepatitis B virus] | 400 | 4e-110 |
| gi\|4884882\|gb\|AAD31855.1\|AF134138.1 | surface antigen [Hepatitis B virus] | 400 | 4e-110 |
| gi\|82491858\|gb\|ABB77809.1\| | HBsAg [Hepatitis B virus] | 399 | 5e-110 |
| gi\|111054795\|gb\|ABH04419.1\| | middle surface protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|111054791\|gb\|ABH04415.1\| | large surface protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|111054765\|gb\|ABH04393.1\| | large surface protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|111054768\|gb\|ABH04396.1\| | small surface protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|90991075\|dbj\|BAE92978.1\| | large S protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|90901681\|gb\|ABE01776.1\| | S protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|6684091\|gb\|AAF23478.1\|AF209395.1 | small surface antigen [Hepatitis B virus] | 399 | 5e-110 |
| gi\|5019946\|gb\|AAD37930.1\| | pre-S/S protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|56417950\|gb\|AAV90853.1\| | HBsAg protein [Hepatitis B virus] ... | 399 | 5e-110 |
| gi\|56417964\|gb\|AAV90860.1\| | HBsAg protein [Hepatitis B virus] | 399 | 5e-110 |
| gi\|15211901\|emb\|CAC51289.1\| | small surface antigen [Hepatitis B virus] | 399 | 5e-110 |
| gi\|15211906\|emb\|CAC51294.1\| | large surface antigen [Hepatitis B virus] | 399 | 5e-110 |
| gi\|113207321\|emb\|CAJ75779.1\| | preS1 large surface protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|113207329\|emb\|CAJ75786.1\| | preS1 large surface protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|113207330\|emb\|CAJ75787.1\| | preS2 middle surface protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|113207322\|emb\|CAJ75780.1\| | preS2 middle surface protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|113207316\|emb\|CAJ75774.1\| | S small surface protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|95007774\|dbj\|BAE94219.1\| | Large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|90901648\|gb\|ABE01760.1\| | S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|90901711\|gb\|ABE01791.1\| | S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|38000021\|gb\|AAR07094.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|38000037\|gb\|AAR07101.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|38000033\|gb\|AAR07099.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|32330484\|gb\|AAP79727.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|32330489\|gb\|AAP79732.1\| | middle S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|59417\|emb\|CAA24233.1\| | unnamed protein product [Hepatitis B virus] | 399 | 6e-110 |
| gi\|16933581\|gb\|AAC58024.3\| | large surface antigen [Hepatitis B virus] | 399 | 6e-110 |
| gi\|15419841\|gb\|AAK97188.1\|AF297621.4 | large/middle/small S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|58189938\|gb\|AAW65550.1\| | HBsAg [Hepatitis B virus] | 399 | 6e-110 |
| gi\|50953657\|gb\|AAT90410.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|2289180\|gb\|AAC58009.1\| | middle S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|27466452\|gb\|AAO12693.1\| | preS1 [Hepatitis B virus] | 399 | 6e-110 |
| gi\|5114073\|gb\|AAD40207.1\|AF090839.4 | PreS1+PreS2+HBsAg [Hepatitis B virus] | 399 | 6e-110 |
| gi\|2289178\|gb\|AAC58008.1\| | middle S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|5114088\|gb\|AAD40219.1\|AF090842.4 | PreS1+PreS2+HBsAg [Hepatitis B virus] | 399 | 6e-110 |
| gi\|58189932\|gb\|AAW65547.1\| | HBsAg [Hepatitis B virus] | 399 | 6e-110 |
| gi\|5114078\|gb\|AAD40211.1\|AF090840.4 | PreS1+PreS2+HBsAg [Hepatitis B virus] | 399 | 6e-110 |
| gi\|87295406\|gb\|ABD37002.1\| | envelope protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|75271046\|gb\|ABA18792.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|75271789\|gb\|ABA18798.1\| | small S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999577\|gb\|AAY25230.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999562\|gb\|AAY25217.1\| | middle S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999561\|gb\|AAY25216.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999632\|gb\|AAY25278.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999625\|gb\|AAY25272.1\| | middle S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999617\|gb\|AAY25265.1\| | middle S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|62999624\|gb\|AAY25271.1\| | large S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|41529371\|dbj\|BAD08482.1\| | small S protein [Hepatitis B virus] | 399 | 6e-110 |
| gi\|138798\|sp\|P03142\|VMSA_HBVAV | Major surface antigen precursor | 399 | 6e-110 |
| gi\|2653687\|gb\|AAB88092.1\| | small S protein [Hepatitis B virus]... | 399 | 6e-110 |
| gi\|90901658\|gb\|ABE01765.1\| | S protein [Hepatitis B virus] | 399 | 8e-110 |
| gi\|3248983\|gb\|AAC62949.1\| | small surface antigen [Hepatitis B virus] | 399 | 8e-110 |
| gi\|122086142\|dbj\|BAF44868.1\| | surface antigen [Hepatitis B virus] | 398 | 1e-109 |
| gi\|95007779\|dbj\|BAE94223.1\| | Large S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|90901758\|gb\|ABE01813.1\| | S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|90901644\|gb\|ABE01758.1\| | S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|90901670\|gb\|ABE01771.1\| | S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|38000028\|gb\|AAR07097.1\| | large S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|14517820\|gb\|AAK64380.1\|AF369532.1 | SHBs [Hepatitis B virus]... | 398 | 1e-109 |
| gi\|4884874\|gb\|AAD31851.1\|AF134134.1 | surface antigen [Hepatitis B virus] | 398 | 1e-109 |
| gi\|2289202\|gb\|AAC58020.1\| | middle S protein [Hepatitis B virus] | 398 | 1e-109 |

| | | | |
|---|--|---------------------|------------------------|
| gi\|56417952\|gb\|AAV90854.1\| | HBsAg protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|3462848\|gb\|AAC33111.1\| | surface antigen [Hepatitis B virus] | 398 | 1e-109 |
| gi\|82491856\|gb\|ABB77808.1\| | HBsAg [Hepatitis B virus] | 398 | 1e-109 |
| gi\|36938796\|gb\|AAQ86869.1\| | small S protein [Hepatitis B virus...] | 398 | 1e-109 |
| gi\|34761126\|gb\|AAQ81917.1\| | surface protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|32330500\|gb\|AAP79741.1\| | large S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|32330505\|gb\|AAP79746.1\| | middle S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|32330504\|gb\|AAP79745.1\| | S protein [Hepatitis B virus] >gi\|... | 398 | 1e-109 |
| gi\|58189956\|gb\|AAW65559.1\| | HBsAg [Hepatitis B virus] | 398 | 1e-109 |
| gi\|87295401\|gb\|ABD36998.1\| | envelope protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|75271377\|gb\|ABA18795.1\| | middle S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999587\|gb\|AAY25239.1\| | S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999585\|gb\|AAY25237.1\| | large S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999586\|gb\|AAY25238.1\| | middle S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999547\|gb\|AAY25204.1\| | S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999553\|gb\|AAY25209.1\| | large S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999554\|gb\|AAY25210.1\| | middle S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999555\|gb\|AAY25211.1\| | S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999545\|gb\|AAY25202.1\| | large S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|62999546\|gb\|AAY25203.1\| | middle S protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|56417931\|gb\|AAV90844.1\| | HBsAg protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|56417942\|gb\|AAV90849.1\| | HBsAg protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|3551318\|dbj\|BAA32872.1\| | envelope protein [Hepatitis B virus] | 398 | 1e-109 |
| gi\|401378\|sp\|Q02317\|VMSA_HBVWP | Major surface antigen precursor... | 398 | 1e-109 |
| gi\|90901652\|gb\|ABE01762.1\| | S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|90901608\|gb\|ABE01740.1\| | S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|34761146\|gb\|AAQ81933.1\| | surface protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330473\|gb\|AAP79718.1\| | middle S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330512\|gb\|AAP79752.1\| | S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330545\|gb\|AAP79781.1\| | middle S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330497\|gb\|AAP79739.1\| | middle S protein [Hepatitis B viru...] | 397 | 2e-109 |
| gi\|32330540\|gb\|AAP79776.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330588\|gb\|AAP79818.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330513\|gb\|AAP79753.1\| | middle S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330492\|gb\|AAP79734.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330468\|gb\|AAP79713.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330472\|gb\|AAP79717.1\| | S protein [Hepatitis B virus] >gi\|... | 397 | 2e-109 |
| gi\|32330580\|gb\|AAP79811.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330477\|gb\|AAP79721.1\| | middle S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330476\|gb\|AAP79720.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330508\|gb\|AAP79748.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|32330585\|gb\|AAP79816.1\| | middle S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|4884894\|gb\|AAD31861.1\|AF134144.1 | surface antigen [Hepatitis B] | 397 | 2e-109 |
| gi\|50953653\|gb\|AAT90408.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|5019972\|gb\|AAD37951.1\| | S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|58189940\|gb\|AAW65551.1\| | HBsAg [Hepatitis B virus] | 397 | 2e-109 |
| gi\|6684095\|gb\|AAF23480.1\|AF209397.1 | small surface antigen [Hepat | 397 | 2e-109 |
| gi\|56417946\|gb\|AAV90851.1\| | HBsAg protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|87116231\|emb\|CAF28873.2\| | preS1/preS2/S surface protein [Hepat | 397 | 2e-109 |
| gi\|22335641\|dbj\|BAC10534.1\| | middle-S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|22335661\|dbj\|BAC10540.1\| | middle-S protein [Hepatitis B vir...] | 397 | 2e-109 |
| gi\|18146686\|dbj\|BAB82404.1\| | HBsAg [Hepatitis B virus] | 397 | 2e-109 |
| gi\|18146690\|dbj\|BAB82408.1\| | LHBS [Hepatitis B virus] | 397 | 2e-109 |
| gi\|22335629\|dbj\|BAC10528.1\| | small S protein [Hepatitis B viru...] | 397 | 2e-109 |
| gi\|22335650\|dbj\|BAC10537.1\| | middle-S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|116812259\|dbj\|BAF36015.1\| | Large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|23194341\|gb\|AAN15117.1\| | S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|23194345\|gb\|AAN15121.1\| | large S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|14488419\|gb\|AAC58026.2\| | large surface antigen [Hepatitis B vi | 397 | 2e-109 |
| gi\|58189952\|gb\|AAW65557.1\| | HBsAg [Hepatitis B virus] | 397 | 2e-109 |
| gi\|27466466\|gb\|AAO12705.1\| | preS1 [Hepatitis B virus] | 397 | 2e-109 |
| gi\|5019966\|gb\|AAD37946.1\| | pre-S/S protein [Hepatitis B virus] | 397 | 2e-109 |
| gi\|27466460\|gb\|AAO12700.1\| | S [Hepatitis B virus] >gi\|27466467... | 397 | 2e-109 |
| gi\|27466459\|gb\|AAO12699.1\| | preS1 [Hepatitis B virus] | 397 | 2e-109 |

| | | | |
|--|--|---------------------|------------------------|
| gi\|111054773\|gb\|ABH04400.1\| | small surface protein [Hepatitis B v | 397 | 3e-109 |
| gi\|111054772\|gb\|ABH04399.1\| | middle surface protein [Hepatitis B | 397 | 3e-109 |
| gi\|90901580\|gb\|ABE01726.1\| | S protein [Hepatitis B virus] | 397 | 3e-109 |
| gi\|38000023\|gb\|AAR07095.1\| | large S protein [Hepatitis B virus] | 397 | 3e-109 |
| gi\|50953655\|gb\|AAT90409.1\| | large S protein [Hepatitis B virus] | 397 | 3e-109 |
| gi\|58189946\|gb\|AAW65554.1\| | HBsAg [Hepatitis B virus] | 397 | 3e-109 |
| gi\|3128455\|gb\|AAC62941.1\| | small surface antigen [Hepatitis B vir | 397 | 3e-109 |
| gi\|2289190\|gb\|AAC58014.1\| | middle S protein [Hepatitis B virus] | 397 | 3e-109 |
| gi\|27357185\|gb\|AAN86637.1\| | surface protein HBsAg [Hepatitis B vi | 397 | 3e-109 |
| gi\|3462850\|gb\|AAC33112.1\| | surface antigen [Hepatitis B virus] | 397 | 3e-109 |
| gi\|3462844\|gb\|AAC33109.1\| | surface antigen [Hepatitis B virus] | 397 | 3e-109 |
| gi\|122086166\|dbj\|BAF44879.1\| | surface antigen [Hepatitis B virus] | 396 | 4e-109 |
| gi\|90901745\|gb\|ABE01807.1\| | S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|90901566\|gb\|ABE01719.1\| | S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|90901687\|gb\|ABE01779.1\| | S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|60279586\|dbj\|BAD90058.1\| | large surface protein [Hepatitis B v | 396 | 4e-109 |
| gi\|32330553\|gb\|AAP79788.1\| | middle S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|32330548\|gb\|AAP79783.1\| | large S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|4884892\|gb\|AAD31860.1\|AF134143.1 | surface antigen [Hepatitis B | 396 | 4e-109 |
| gi\|15419861\|gb\|AAK97204.1\|AF297625.4 | large/middle/small S protei | 396 | 4e-109 |
| gi\|14488417\|gb\|AAC58025.2\| | large surface antigen [Hepatitis B vi | 396 | 4e-109 |
| gi\|7108613\|gb\|AAF36498.1\| | S antigen [Hepatitis B virus] | 396 | 4e-109 |
| gi\|2289196\|gb\|AAC58017.1\| | middle S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|6684111\|gb\|AAF23488.1\|AF209405.1 | small surface antigen [Hepat | 396 | 4e-109 |
| gi\|62999570\|gb\|AAY25224.1\| | middle S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|62999611\|gb\|AAY25260.1\| | S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|62999610\|gb\|AAY25259.1\| | middle S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|62999571\|gb\|AAY25225.1\| | S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|62999609\|gb\|AAY25258.1\| | large S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|62999569\|gb\|AAY25223.1\| | large S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|56417948\|gb\|AAV90852.1\| | HBsAg protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|56417927\|gb\|AAV90842.1\| | HBsAg protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|41529347\|dbj\|BAD08464.1\| | small S protein [Hepatitis B virus] | 396 | 4e-109 |
| gi\|32330552\|gb\|AAP79787.1\| | S protein [Hepatitis B virus] >gi\|... | 396 | 4e-109 |
| gi\|15211893\|emb\|CAC51282.1\| | small surface antigen [Hepatitis B v | 396 | 4e-109 |
| gi\|15211898\|emb\|CAC51287.1\| | large surface antigen [Hepatitis B v | 396 | 4e-109 |
| gi\|15211899\|emb\|CAC51288.1\| | middle surface antigen [Hepatitis B | 396 | 4e-109 |
| gi\|90901697\|gb\|ABE01784.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|90901588\|gb\|ABE01730.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|32330536\|gb\|AAP79773.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|32330560\|gb\|AAP79794.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|32330561\|gb\|AAP79795.1\| | middle S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|32330532\|gb\|AAP79769.1\| | large S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|32330537\|gb\|AAP79774.1\| | middle S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|32330556\|gb\|AAP79790.1\| | large S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|4884896\|gb\|AAD31862.1\|AF134145.1 | surface antigen [Hepatitis B | 396 | 5e-109 |
| gi\|58189944\|gb\|AAW65553.1\| | HBsAg [Hepatitis B virus] | 396 | 5e-109 |
| gi\|5114068\|gb\|AAD40203.1\|AF090838.4 | PreS1+PreS2+HBsAg [Hepatitis | 396 | 5e-109 |
| gi\|3248985\|gb\|AAC62950.1\| | small surface antigen [Hepatitis B vir | 396 | 5e-109 |
| gi\|2289176\|gb\|AAC58007.1\| | middle S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|83272677\|gb\|ABC00816.1\| | small surface envelope protein [Hepat | 396 | 5e-109 |
| gi\|62999531\|gb\|AAY25190.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|62999594\|gb\|AAY25245.1\| | middle S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|62999595\|gb\|AAY25246.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|62999530\|gb\|AAY25189.1\| | large S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|62999593\|gb\|AAY25244.1\| | large S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|41529403\|dbj\|BAD08506.1\| | small S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|41529399\|dbj\|BAD08503.1\| | small S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|38198550\|emb\|CAE54058.1\| | S protein [Hepatitis B virus] | 396 | 5e-109 |
| gi\|125863322\|gb\|ABN58464.1\| | small surface protein [Hepatitis B v | 395 | 7e-109 |
| gi\|125863320\|gb\|ABN58462.1\| | large surface protein [Hepatitis B v | 395 | 7e-109 |
| gi\|125863321\|gb\|ABN58463.1\| | middle surface protein [Hepatitis B | 395 | 7e-109 |
| gi\|122086144\|dbj\|BAF44869.1\| | surface antigen [Hepatitis B virus] | 395 | 7e-109 |
| gi\|90901699\|gb\|ABE01785.1\| | S protein [Hepatitis B virus] | 395 | 7e-109 |

| | | | |
|------------------------------------|--------------------------------------|------------|--------|
| <u>gi\|90901705\|gb\|ABE01788.1\|</u> | S protein [Hepatitis B virus] | <u>395</u> | 7e-109 |
| <u>gi\|90901584\|gb\|ABE01728.1\|</u> | S protein [Hepatitis B virus] | <u>395</u> | 7e-109 |
| <u>gi\|90901728\|gb\|ABE01799.1\|</u> | S protein [Hepatitis B virus] | <u>395</u> | 7e-109 |
| <u>gi\|67968256\|dbj\|BAE00090.1\|</u> | large S protein [Hepatitis B virus] | <u>395</u> | 7e-109 |
| <u>gi\|41529383\|dbj\|BAD08491.1\|</u> | small S protein [Hepatitis B virus] | <u>395</u> | 7e-109 |
| <u>gi\|22335647\|dbj\|BAC10536.1\|</u> | middle-S protein [Hepatitis B virus] | <u>395</u> | 7e-109 |
| <u>gi\|90901610\|gb\|ABE01741.1\|</u> | S protein [Hepatitis B virus] | <u>395</u> | 9e-109 |
| <u>gi\|90901616\|gb\|ABE01744.1\|</u> | S protein [Hepatitis B virus] | <u>395</u> | 9e-109 |
| <u>gi\|90901578\|gb\|ABE01725.1\|</u> | S protein [Hepatitis B virus] | <u>395</u> | 9e-109 |
| <u>gi\|32330529\|gb\|AAP79767.1\|</u> | middle S protein [Hepatitis B virus] | <u>395</u> | 9e-109 |
| <u>gi\|32330524\|gb\|AAP79762.1\|</u> | large S protein [Hepatitis B virus] | <u>395</u> | 9e-109 |

Alignments

> gi|133919201|emb|CAL29861.1| large surface antigen [Hepatitis B virus]
Length=357

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|---|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 132 | ..... | 191 |
| | | | |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 192 | ..... | 251 |
| | | | |
| Query | 121 | cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSLVLPFV | 180 |
| Sbjct | 252 | ..... | 311 |
| | | | |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 312 | ..... | 357 |

> gi|128168870|dbj|BAF48757.1| envelope protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|---|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 175 | ..... | 234 |
| | | | |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 235 | ..... | 294 |
| | | | |
| Query | 121 | cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSLVLPFV | 180 |
| Sbjct | 295 | ..... | 354 |
| | | | |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 355 | ..... | 400 |

> gi|82491850|gb|ABB77805.1| HBsAg [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

| | | | |
|-------|---|--|----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
|-------|---|--|----|

Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61L..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPISSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPFIFFCLWVYI 226

Sbjct 181 226

>gi|62006070|dbj|BAD91280.1| LHBs [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 235 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPISSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 295 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPFIFFCLWVYI 226

Sbjct 355 400

>gi|38000026|gb|AAR07096.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 235 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPISSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 295 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPFIFFCLWVYI 226

Sbjct 355 400

>gi|38000031|gb|AAR07098.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 235 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPISSWAFACYLWEWASVRFSWLSLLVPFV 180

Sbjct 295 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 400

> gi|32330520|gb|AAP79759.1| S protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61R..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 180

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 226

> gi|32330516|gb|AAP79755.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235R..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 400

> gi|32330521|gb|AAP79760.1| middle S protein [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 56 115

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 116R..... 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 176 235

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 236 281

> gi|14285169|gb|AAK58874.1| PreS1+PreS2+HBsAg [synthetic construct]
gi|22530872|gb|AAM96926.1| large S protein [Hepatitis B virus]
 Length=400

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|---|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH | 60 |
| Sbjct | 175 | ..... | 234 |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpqstttstgp | 120 |
| Sbjct | 235 | ..... | 294 |
| Query | 121 | ckttcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 295 | ..... | 354 |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 355 | ..... | 400 |

> gi|15419851|gb|AAK97196.1|AF297623_4 large/middle/small S proteins [Hepatitis B virus]
 Length=372

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|---|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH | 60 |
| Sbjct | 147 | ..... | 206 |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpqstttstgp | 120 |
| Sbjct | 207 | ..... | 266 |
| Query | 121 | ckttcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 267 | ..... | 326 |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 327 | ..... | 372 |

> gi|527444|emb|CAA84792.1| surface protein S [Hepatitis B virus]
 Length=400

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|---|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH | 60 |
| Sbjct | 175 | ..... | 234 |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpqstttstgp | 120 |
| Sbjct | 235 | ..... | 294 |
| Query | 121 | ckttcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 295 | ..... | 354 |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 355 | ..... | 400 |

> gi|15419856|gb|AAK97200.1|AF297624_4 large/middle/small S proteins [Hepatitis B virus]
 Length=389

Score = 401 bits (1031), Expect = 1e-110
 Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 164 ..... 223

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 224 ..... 283

Query 121 cktcttPAQGNSMFSPCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 284 ..... 343

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 344 ..... 389

```

> gi|4884900|gb|AAD31864.1|AF134147_1 surface antigen [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1 ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61 ..... 120

Query 121 cktcttPAQGNSMFSPCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 .R..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

> gi|18389986|gb|AAL68820.1| surface antigen [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 175 ..... 234

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNSMFSPCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400

```

> gi|22530873|gb|AAM96927.1| middle S protein [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 56 ..... 115

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 116 ..... 175

```

```
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 176 ..... 235

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 236 ..... 281
```

> gi|59802799|gb|AAX07610.1| pre-S1 protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

> gi|47499925|gb|AAT28712.1| middle S protein [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 56 ..... 115

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 116 .....T 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 176 ..... 235

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 236 ..... 281
```

> gi|47499924|gb|AAT28711.1| large S protein [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 .....T 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

> gi|47499926|gb|AAT28713.1| S protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|--|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 1 | ..... | 60 |
| | | | |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 61 |T | 120 |
| | | | |
| Query | 121 | cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 121 | ..... | 180 |
| | | | |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 181 | ..... | 226 |

> gi|3248975|gb|AAC62945.1| small surface antigen [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|--|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 1 | ..... | 60 |
| | | | |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 61 |L..... | 120 |
| | | | |
| Query | 121 | cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 121 | ..... | 180 |
| | | | |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 181 | ..... | 226 |

> gi|5019941|gb|AAD37926.1| S protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|--|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 1 | ..... | 60 |
| | | | |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 61 | ..... | 120 |
| | | | |
| Query | 121 | cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 121 |M..... | 180 |
| | | | |
| Query | 181 | QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 181 | ..... | 226 |

> gi|5114083|gb|AAD40215.1|AF090841_4 PreS1+PreS2+HBsAg [Hepatitis B virus]
Length=400

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|--|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 175 | ..... | 234 |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfillllclifllvlllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 235 | ..... | 294 |
| Query | 121 | ckttcttPAQGNSMFSPCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 295 | ..... | 354 |
| Query | 181 | QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 355 | ..... | 400 |

> gi|2289174|gb|AAC58006.1| middle S protein [Hepatitis B virus]
gi|2289184|gb|AAC58011.1| middle S protein [Hepatitis B virus]
gi|59802800|gb|AA07611.1| pre-S2 protein [Hepatitis B virus]
gi|133919194|emb|CAL29855.1| middle surface antigen [Hepatitis B virus]
gi|133919202|emb|CAL29862.1| middle surface antigen [Hepatitis B virus]
gi|133919210|emb|CAL29869.1| middle surface antigen [Hepatitis B virus]
Length=281

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|--|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 56 | ..... | 115 |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfillllclifllvlllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 116 | ..... | 175 |
| Query | 121 | ckttcttPAQGNSMFSPCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 176 | ..... | 235 |
| Query | 181 | QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 236 | ..... | 281 |

> gi|6684101|gb|AAF23483.1|AF209400_1 small surface antigen [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

| | | | |
|-------|-----|--|-----|
| Query | 1 | MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS | 60 |
| Sbjct | 1 | ..... | 60 |
| Query | 61 | SPTSCPPICPGYRWMclrrfiiflfillllclifllvlllDYQGMLPVCPLIpgstttstgp | 120 |
| Sbjct | 61 |T..... | 120 |
| Query | 121 | ckttcttPAQGNSMFSPCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV | 180 |
| Sbjct | 121 | ..... | 180 |
| Query | 181 | QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI | 226 |
| Sbjct | 181 | ..... | 226 |

> gi|71068034|gb|AAZ23006.1| large S protein [Hepatitis B virus]
Length=398

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)


```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 173 ..... 232

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 233 ..... 292

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 293 ..... 352

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 353 ..... 398

```

> gi|71068037|gb|AAZ23008.1| large S protein [Hepatitis B virus]
Length=398

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 173 ..... 232

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 233 ..... 292

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 293 ..... 352

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 353 ..... 398

```

> gi|56417960|gb|AAV90858.1| HBsAg protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  .....H..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

> gi|56417968|gb|AAV90862.1| HBsAg protein [Hepatitis B virus]
Length=226

Score = 401 bits (1031), Expect = 1e-110
Identities = 225/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTS NH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  .....A..... 120

```

```
Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226
```

```
> gi|38000017|gb|AAR07092.1| large S protein [Hepatitis B virus]
gi|50953649|gb|AAT90406.1| large S protein [Hepatitis B virus]
gi|116812265|dbj|BAF36019.1| Large S protein [Hepatitis B virus]
gi|116812268|dbj|BAF36021.1| Large S protein [Hepatitis B virus]
gi|133919193|emb|CAL29854.1| large surface antigen [Hepatitis B virus]
gi|133919209|emb|CAL29868.1| large surface antigen [Hepatitis B virus]
Length=400
```

Score = 401 bits (1031), Expect = 1e-110
Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```
Query 1 MENITSGFLGLPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFVGLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400
```

```
> gi|4884902|gb|AAD31865.1|AF134148.1 surface antigen [Hepatitis B virus]
gi|6979945|gb|AAF34665.1|AF222311.1 surface protein [Hepatitis B virus]
gi|14517844|gb|AAK64392.1|AF369544.1 SHBs [Hepatitis B virus]
gi|329719|gb|AAA45524.1| surface antigen [Hepatitis B virus]
gi|416075|emb|CAA53362.1| surface antigen [Hepatitis B virus]
gi|2653707|gb|AAB88102.1| small S protein [Hepatitis B virus]
gi|2653715|gb|AAB88106.1| small S protein [Hepatitis B virus]
gi|3892578|emb|CAA09959.1| major surface protein [Hepatitis B virus]
gi|14485029|gb|AAK62896.1| SHBs [Hepatitis B virus]
gi|22530874|gb|AAM96928.1| HBsAg [Hepatitis B virus]
gi|41529351|dbj|BAD08467.1| small S protein [Hepatitis B virus]
gi|41529355|dbj|BAD08470.1| small S protein [Hepatitis B virus]
gi|41529359|dbj|BAD08473.1| small S protein [Hepatitis B virus]
gi|41529363|dbj|BAD08476.1| small S protein [Hepatitis B virus]
gi|56417954|gb|AAV90855.1| HBsAg protein [Hepatitis B virus]
gi|56417962|gb|AAV90859.1| HBsAg protein [Hepatitis B virus]
gi|56417966|gb|AAV90861.1| HBsAg protein [Hepatitis B virus]
gi|56417970|gb|AAV90863.1| HBsAg protein [Hepatitis B virus]
gi|56417972|gb|AAV90864.1| HBsAg protein [Hepatitis B virus]
gi|56417974|gb|AAV90865.1| HBsAg protein [Hepatitis B virus]
gi|56417976|gb|AAV90866.1| HBsAg protein [Hepatitis B virus]
gi|56417978|gb|AAV90867.1| HBsAg protein [Hepatitis B virus]
gi|58189958|gb|AAW65560.1| HBsAg [Hepatitis B virus]
gi|58189960|gb|AAW65561.1| HBsAg [Hepatitis B virus]
gi|59802801|gb|AAX07612.1| surface antigen [Hepatitis B virus]
gi|62006065|dbj|BAD91275.1| HBsAg [Hepatitis B virus]
gi|71479935|dbj|BAE16501.1| small S protein [Hepatitis B virus]
gi|82491848|gb|ABB77804.1| HBsAg [Hepatitis B virus]
gi|82491862|gb|ABB77811.1| HBsAg [Hepatitis B virus]
gi|90901598|gb|ABE01735.1| S protein [Hepatitis B virus]
gi|90901630|gb|ABE01751.1| S protein [Hepatitis B virus]
```

```

gi|90901654|gb|ABE01763.1| S protein [Hepatitis B virus]
gi|90901662|gb|ABE01767.1| S protein [Hepatitis B virus]
gi|90901664|gb|ABE01768.1| S protein [Hepatitis B virus]
gi|90901666|gb|ABE01769.1| S protein [Hepatitis B virus]
gi|90901672|gb|ABE01772.1| S protein [Hepatitis B virus]
gi|90901677|gb|ABE01774.1| S protein [Hepatitis B virus]
gi|90901679|gb|ABE01775.1| S protein [Hepatitis B virus]
gi|90901683|gb|ABE01777.1| S protein [Hepatitis B virus]
gi|90901685|gb|ABE01778.1| S protein [Hepatitis B virus]
gi|90901689|gb|ABE01780.1| S protein [Hepatitis B virus]
gi|90901691|gb|ABE01781.1| S protein [Hepatitis B virus]
gi|90901693|gb|ABE01782.1| S protein [Hepatitis B virus]
gi|90901695|gb|ABE01783.1| S protein [Hepatitis B virus]
gi|90901701|gb|ABE01786.1| S protein [Hepatitis B virus]
gi|90901707|gb|ABE01789.1| S protein [Hepatitis B virus]
gi|90901713|gb|ABE01792.1| S protein [Hepatitis B virus]
gi|90901715|gb|ABE01793.1| S protein [Hepatitis B virus]
gi|90901717|gb|ABE01794.1| S protein [Hepatitis B virus]
gi|90901724|gb|ABE01797.1| S protein [Hepatitis B virus]
gi|90901726|gb|ABE01798.1| S protein [Hepatitis B virus]
gi|90901741|gb|ABE01805.1| S protein [Hepatitis B virus]
gi|90901748|gb|ABE01808.1| S protein [Hepatitis B virus]
gi|90901750|gb|ABE01809.1| S protein [Hepatitis B virus]
gi|90901754|gb|ABE01811.1| S protein [Hepatitis B virus]
gi|90901760|gb|ABE01814.1| S protein [Hepatitis B virus]
gi|90901762|gb|ABE01815.1| S protein [Hepatitis B virus]
gi|90901766|gb|ABE01817.1| S protein [Hepatitis B virus]
gi|90901768|gb|ABE01818.1| S protein [Hepatitis B virus]
gi|90901770|gb|ABE01819.1| S protein [Hepatitis B virus]
gi|90901772|gb|ABE01820.1| S protein [Hepatitis B virus]
gi|90901774|gb|ABE01821.1| S protein [Hepatitis B virus]
gi|90901776|gb|ABE01822.1| S protein [Hepatitis B virus]
gi|122086140|dbj|BAF44867.1| surface antigen [Hepatitis B virus]
gi|122086162|dbj|BAF44877.1| surface antigen [Hepatitis B virus]
gi|122086176|dbj|BAF44884.1| surface antigen [Hepatitis B virus]
gi|133919195|emb|CAL29856.1| small surface antigen [Hepatitis B virus]
gi|133919203|emb|CAL29863.1| small surface antigen [Hepatitis B virus]
gi|133919211|emb|CAL29870.1| small surface antigen [Hepatitis B virus]
gi|223121|prf||0509585A protein,HBs antigen major

```

Length=226

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 1 ..... 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61 ..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFVGLSPTVWLSAIWMMWYGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

```

>| gi|138789|sp|P03141|VMSA_HBVW2 Major surface antigen precursor
gi|59421|emb|CAA26539.1| unnamed protein product [Hepatitis B virus]
Length=400

```

Score = 401 bits (1031), Expect = 1e-110

Identities = 226/226 (100%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 ..... 400

```

> gi|56417939|gb|AAV90848.1| HBsAg protein [Hepatitis B virus]
Length=226

Score = 400 bits (1029), Expect = 2e-110
Identities = 224/226 (99%), Positives = 225/226 (99%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 1  ..... 60

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 61  .....F.....I..... 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 121 ..... 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 181 ..... 226

```

> gi|133919218|emb|CAL29876.1| large surface antigen [Hepatitis B virus]
gi|133919224|emb|CAL29881.1| large surface antigen [Hepatitis B virus]
Length=400

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 175 ..... 234

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120
Sbjct 235 ..... 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180
Sbjct 295 ..... 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
Sbjct 355 .....M..... 400

```

> gi|133919217|emb|CAL29875.1| middle surface antigen [Hepatitis B virus]
gi|133919223|emb|CAL29880.1| middle surface antigen [Hepatitis B virus]
Length=281

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

```

Query 1  MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
Sbjct 56 ..... 115

Query 61  SPTSCPPICPGYRWMclrrfiiflfillllclifllvllDYQGMLPVCPLIpgstttstgp 120

```

Sbjct 116 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180

Sbjct 176 235

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226

Sbjct 236M..... 281

> gi|90901732|gb|ABE01801.1| S protein [Hepatitis B virus]
Length=226

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 1V..... 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226

Sbjct 181 226

> gi|90901743|gb|ABE01806.1| S protein [Hepatitis B virus]
gi|133919219|emb|CAL29877.1| small surface antigen [Hepatitis B virus]
gi|133919225|emb|CAL29882.1| small surface antigen [Hepatitis B virus]
Length=226

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226

Sbjct 181M..... 226

> gi|6684109|gb|AAF23487.1|AF209404.1 small surface antigen [Hepatitis B virus]
Length=226

Score = 400 bits (1028), Expect = 3e-110
Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60

Sbjct 1 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120

Sbjct 61 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFAKYLWEWASVRFSWLSLLVPFV 180

Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 181N..... 226

> gi|56417958|qb|AAV90857.1| HBsAg protein [Hepatitis B virus]
gi|90901720|qb|ABE01795.1| S protein [Hepatitis B virus]
 Length=226

Score = 400 bits (1028), Expect = 3e-110
 Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
 Sbjct 1A..... 60

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
 Sbjct 61 120

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
 Sbjct 121 180

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 181 226

> gi|38488599|dbj|BAD02316.1| large surface protein [Hepatitis B virus]
 Length=400

Score = 400 bits (1028), Expect = 3e-110
 Identities = 225/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
 Sbjct 175 234

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
 Sbjct 235 294

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
 Sbjct 295 354

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 355N..... 400

> gi|109637940|emb|CAK55123.1| middle surface protein [Hepatitis B virus subtype ADW2]
 Length=281

Score = 400 bits (1027), Expect = 4e-110
 Identities = 224/226 (99%), Positives = 226/226 (100%), Gaps = 0/226 (0%)

Query 1 MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGSPVCLGQNSQSPTSNNH 60
 Sbjct 56 115

Query 61 SPTSCPPICPGYRWMclrrfiiflfilllclifllvllDYQGMLPVCPLIpgstttstgp 120
 Sbjct 116T..... 175

Query 121 cktcttPAQGNMFPSCCCTKPTDGNCTCIPIPSSWAFACYLWEWASVRFSWLSLLVPFV 180
 Sbjct 176S..... 235

Query 181 QWFGVLSPTVWLSAIWMMWYWGPSLYSIVSPFIPLLPIFFCLWVYI 226
 Sbjct 236 281